

## ABSTRACT

A plurality of individual fuel cells are connected in series with each other to construct the fuel cell. The fuel cell is  
5 diagnosed on the basis of an average output voltage  $V_a$  of the individual cells, their standard deviation  $\sigma$ , individual output voltages, their variances  $\sigma^2$  of vibration components and their voltage drop speed of their non-vibration components. For example, if  $V_a$  is within a normal range  
10 and moreover at least one of the individual output voltages is not within a normal range, it is diagnosed that water blocks the fuel electrode. If  $V_a$  is not within a normal range and moreover  $\sigma$  is within a normal range, it is diagnosed that the electrolyte film is dried. Further, if  
15  $V_a$  is not within a normal range and moreover  $\sigma$  is not within a normal range, it is diagnosed that the fuel (hydrogen) supply is insufficient.

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